RESTORATION FOLLOWING PURPLE LOOSESTRIFE REMOVAL

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OVERVIEW

- Theories on Plant Community Development
- Site Characteristics
- Potential Plant Materials

PLANT COMMUNITY DEVELOPMENT

1. SELF-RESTORATION/
   SELF-DESIGN DESIGN

2. ACTIVE-RESTORATION/
   DESIGNER-DESIGN

SELF-DESIGN

- Based in the Clementsian theory of climax communities and equilibrial succession.

SELF-DESIGN

- The practitioner following Clementsian successional theory asserts that the ultimate plant community will be determined by climate and abiotic factors.

SELF-DESIGN

- A practitioner of the Clementsian school asserts that with a clean pallet minimal intervention is necessary for development of a functional plant community.

DESIGNER

- Based on Gleasonian's theory of succession.

DESIGNER

- Emphases on species life history strategies
- Recognizes that the order of species arriving at a site can alter the successional trajectory.

DESIGNER

- The practitioner following the dictates of Gleasonian successional theory asserts that active management can alter the characteristics of the realized plant community.

RESTORATION GOALS

- Self-design approach is often associated with restoration concerned with ecosystem processes such as biomass production and removal of sediment, nitrogen and phosphorus from the water.

- The designer approach is often associated with restoration concerned with biodiversity

SITE CONDITIONS

Wetland Types Impacted by Purple Loosestrife

- Marshes
- Sedgemeadows
- Fens
- Bogs
- Pannes
- Wet Prairies

LANDSCAPE CHARACTERISTICS

- Connectivity to other wetlands
- Quality of adjacent wetlands
- Use of adjacent uplands
- Buffer zones

ABIOTIC CHARACTERISTICS

- Water Chemistry
- Soil types
- Soil Chemistry
- Hydroperiod

BIOTIC FEATURES

- Potential wildlife function (Birds, Fish, etc.).
- Potential herbivory.
- Quality of other vegetation if present.
- Quality of the seedbank.

SEEDBANK SPECIES

- **Sedge Meadow**
- Blue Vervain
- Cattail
- Reed Canary Grass
- Witch Grass
- Dudley's Rush
- Fowl Meadow Grass
- Soft-Stem

- **GM (derby ditch)**
- False Nettle
- Joe Pye Weed
- Boneset
- Marsh Purslane
- Cattail
- False Nettle
- Juncus spp
- Yellow Rocket

SEEDBANK SPECIES

- **Cowles Bog**
- Wool Grass
- Cattail
- Juncus spp.
- Blue vervain
- Marsh Purslane
- Skullcap
- Smartweed
- Clear weed

- Matrix Species were not present
- In all cases other potential invasive species such as Cattail, Reed Canary Grass, Common Reed, were present

PLANT MATERIALS

LIFE STAGES

- Seeds
- Vegetative propagules (rhizomes, bulbs etc.
- Potted plants.

SPECIES FROM SEED

- Many forbs- Joe pye weed, Marsh milk weed, goldenrods, Asters,
- Species of the genus Juncus.
- Some grass species such as Fowl manna grass
- Some Carex spp. Especially those that occur at wetland-upland ecotone (fox sedge, crested oval sedge)
- Duck Potato
- Soft stem bulrush.

SPECIES FROM VEGETATIVE PROPAGULES

- Duck Potato
- Hard Stem Bulrush
- Blue Flag
- Common Burreed

POTTED SPECIES

- Many Sedges- Tussock sedge, Lake sedge

PLANT INSTALLATION

SHOTGUN PLANTING

- Plant materials are collectively dispersed in target zones.

Nature will sieve the propagules selecting those species most appropriate for a given site.

CUSTOM PLANTING

- A skilled restorationist will evaluate the available micro-habitats and then select a subset of species that are best suited for those micro-habitats.

- Cost effective

NATIVE PLANTS TO REPLACE PURPLE LOOSESTRIFE

Verbena hastata

(Blue Vervain)

Pontederia cordata

(Pickerel Weed)

Lobelia cardinalis

(Cardinal Flower)

Carex spp.

Many sedge species

***Mimulus* spp.**

Monkey-flower